

Los Alamos National Laboratory
Yucca Mountain Site Characterization Project

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Chemical Science Technology DPs	Title	Effective Date	Training Level: Read (R) or Formal (F)
LANL-CST-DP-15, R4 (E)	Crushed Rock Column Studies	03/21/97	F
LANL-CST-DP-35, R3	pH Measurement	11/28/94	R
LANL-CST-DP-60, R5 (E)	Preparation of NTS Samples for LANL YMP Solid Core Experiments	12/23/96	F
LANL-CST-DP-61, R4 (E)	Solid Rock Column Experiment	03/21/97	F
LANL-CST-DP-63, R5 (E)	Preparation of Core Samples for Crushed Rock Experiments	12/23/96	R
LANL-CST-DP-66, R3 (E)	Saturated Diffusion Cell Experiment	12/23/96	R
LANL-CST-DP-67, R2 (E)	Rock Beaker Experiment	12/10/96	R
LANL-CST-DP-68, R2 (E)	NTS Fracture Core Experiments	03/21/97	F
LANL-INC-DP-78, R1	The Preparation of Solutions of Pure Oxidation States of Neptunium, Plutonium, and Americium	04/10/91	F
LANL-CST-DP-79, R2 (E)	Liquid Scintillation Counting of Samples	08/16/96	F
LANL-INC-DP-85, R0	Determining UV-VIS-NIR-Absorption and Diffuse Reflectance Spectra	04/10/91	F
LANL-CST-DP-86, R2 (E)	Sorption and Desorption Determinations by a Batch Sample Technique for the Dynamic Transport Task	12/23/96	F

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LANL-INC-DP-89, R1 (E)	Procedure for Sieving Soil and Rock Samples	12/23/96	R
LANL-INC-DP-90, R2 (E)	Measurement of Moisture Content of Soil Samples	01/09/97	R
LANL-CST-DP-92, R2 (E)	Sample Leaching to Extract Soluble Chloride and Bromide	08/29/96	R
LANL-CST-DP-93, R2 (E)	Step-Leaching Procedure for Extracting Soluble Chloride and Bromide	01/09/97	R
LANL-CST-DP-95, R2 (E)	Preparation of Samples for Chlorine-36 Analysis	08/16/96	F
LANL-CST-DP-97, R1 (E)	Preparation of Carrier Solution for Chlorine-36 Samples	08/16/96	R
LANL-INC-DP-98, R1 (E)	Tuff Wafer Experiments	12/10/96	R
LANL-CST-DP-99, R1 (E)	Collection of Bulk Well and Spring Water Samples	12/23/96	F
LANL-CST-DP-100, R1 (E)	Sorption and Desorption Determinations by a Batch Sample Technique within the Controlled Atmosphere of a Glovebox for the Dynamic Transport Task	12/10/96	R
LANL-CST-DP-101, R1 (E)	Colloid Sampling for YMP Studies	12/10/96	R
LANL-CST-DP-102, R1 (E)	Redox Potential (EH) Measurement	12/10/96	R
LANL-CST-DP-103, R1 (E)	Identification, Storage, and Handling of Samples for the Water Movement Test	12/10/96	R
LANL-CST-DP-104, R1 (E)	Electrical Conductivity of Aqueous Solutions	01/09/97	R
LANL-CST-DP-105, R1 (E)	Extraction of Chloride From Rat-Urine Samples for Chlorine-36 Analysis	10/16/96	R
LANL-CST-DP-106, R1 (E)	Preparation and Conduction of Dissolution Rate Experiments	05/06/97	R

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LANL-CST-DP-107, R1 (E)	Use of ICP Atomic Emission Spectrometry to Determine Constituent Concentrations in Solution	12/23/96	R
LANL-CST-DP-108, R0 (E)	Collection of Field Samples for the Water Movement Test	01/09/97	R
LANL-CST-DP-109, R0 (E)	Particle Size Reduction of Samples	01/09/97	R
LANL-CST-DP-110, R0 (E)	Use of Ion Chromatography to Determine Anion Concentrations	07/09/97	F
LANL-CST-DP-112, R0 (E)	Sorption of Radionuclides onto Colloids	05/27/97	R

LANL-CST-DP-75, R1 (Deleted 12/23/96)	Determination of Particle Size Distribution by Autocorrelation Photon Spectroscopy	--
TWS-INC-DP-05, R2 (Deleted 8/8/94)	Sorption, Desorption Ratio Determination of Geologic Materials by a Batch Method	--
TWS-INC-DP-26, R1 (Deleted 9/11/92)	Preparation of Aqueous solutions for Analysis, Use in Experiments, or as Standards for Water Sample Analysis	--
TWS-INC-DP27, R1 (Deleted 9//11/92)	Elemental Concentration Determination by Direct-Current-Plasma Atomic-Emission-Spectroscopy	--
TWS-INC-DP-62, R2 (Deleted 6/10/94)	Bulk NTS Well Water Samples	--
TWS-INC-DP-64, R0 (Deleted 9/11/92)	Gamma Counting of Samples for Dynamic Transport (Perkin Elmer Model 9000 Robot)	--
TWS-INC-DP-69, R0 (Deleted 6/26/95)	The Operation of Spex Fluorometer model 222	--

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TWS-INC-DP-74, R0 (Deleted 8/27/92)	Flexible Cell Hydrothermal Experiments	--
TWS-INC-DP-80, R0 (Deleted 12/10/96)	The Purification of Pu (IV) Colloid by Centrifugation and Ion-Exchange Techniques	--
TWS-INC-DP-82, R0 (Deleted 9/11/92)	Procedure for Powder X-Ray Diffraction at TA-48	--
TWS-INC-DP-83, R1 (Deleted 6/10/94)	Storage and Handling of Solid Samples	--
TWS-INC-DP-84, R0 (Deleted 11/21/91)	Cuttings Collection Procedure	--
LANL-INC-DP-87, R2 (Superseded by LANL-CST-DP-103, R0)	Identification, Storage, and Handling of Samples at Hydro Geo Chem	--
LANL-INC-DP-88, R0 (Superseded by LANL-CST-DP-108, R0)	Collection of Soil Samples for Analysis of Moisture Content, Bulk Density, Halides and Chlorine Isotopes	--
LANL-INC-DP-94, R2 (Superseded by LANL-CST-DP-110, R0)	Using Ion Chromatography to Determine Chloride and Bromide Concentrations	--
LANL-INC-DP-96, R0 (Deleted 12/10/96)	Measurement of Bulk Density of Soil Samples	--

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Earth and Space Sciences DPs	Title	Effective Date	Training Level Read (R) or Formal (F)
LANL-EES-DP-03, R5 (E)	Petrography Procedure	03/21/97	R
LANL-EES-DP-16, R5	Siemens X-Ray Diffraction Procedure	07/11/91	F
LANL-EES-DP-24, R3	Calibration and Alignment of the Siemens Diffractometers	07/11/91	R
LANL-EES-DP-25, R4	Clay Mineral Separation and Preparation for X-Ray Diffraction Analysis	07/11/91	R
LANL-EES-DP-56, R3	Brinkmann Automated Grinder Procedure	07/11/91	R
LANL-EES-DP-101, R2	Sample/Speciman Collection, Identification, and Control for Mineralogy-Petrology Studies	02/05/93	R
CR No. 135 TWS-ESS-DP-102, R2	Procedure for Determination of Volume Constituents in Thin Sections of Rocks	04/24/90	R
TWS-ESS-DP-103, R1	Geopetal Orientation Measurement	02/23/89	R
LANL-EES-DP-105, R2	Thermal Calibration Procedure	07/11/91	R
LANL-EES-DP-107, R3 (E)	Thermogravimetric and Differential Scanning Calorimetry Analyses	04/15/97	R
LANL-EES-DP-110, R3 (E)	Zeolite Purification/Separation Procedure	02/14/97	R
LANL-EES-DP-111, R4	Rigaku 3064 X-Ray Fluorescence Spectrometer Operating System	03/29/94	F
LANL-EES-DP-112, R2	Operating Instruction for the ISI DS-130 Scanning Electron Microscope and Tracor Northern Series II X-Ray Analyzer	04/09/92	F

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TWS-ESS-DP-113, R2 (E)	Procedure: Temperature Determinations from Fluid Inclusion Studies	12/23/96	R
LANL-EES-DP-115, R4 (E)	Vaisala HMI-36 Humidity Probe Procedure	03/21/97	R
LANL-EES-DP-116, R2 (E)	Quantitative X-Ray Diffraction Data Reduction Procedure	01/21/97	R
LANL-EES-DP-119, R2	Moisture Evolution Analyzer Procedure	12/14/92	R
LANL-EES-DP-121, R1	Long-Term Sample Heating Procedure	07/11/91	R
LANL-EES-DP-124, R1	Use of Binocular Microscope in Fracture Mineralogy Studies	06/03/91	R
LANL-EES-DP-126, R1	Heavy-Liquid Mineral Separation Procedure	10/21/91	F
LANL-EES-DP-129, R0	ADEM Scanning Electron Microscope Operating Procedure	04/09/92	F
LANL-EES-DP-130, R0	Geologic Sample Preparation	05/27/92	F
LANL-EES-DP-131, R0	Cameca SX-50 Electron Microprobe Operating Procedure	09/11/92	F
LANL-EES-DP-134, R0	INEL X-Ray Diffraction Procedure	08/06/93	F

TWS-EES-DP-04, R5 (Superseded by LANL-EES-DP-130, R0)	Thin Section Preparation Procedure		--
TWS-EES-DP-06, R3 (Deleted 4/9/92)	Carbon Coating: Operation of the LADD Vacuum Evaporator for Carbon Coating Samples		--
LANL-EES-DP-107, R4 (Deleted 11/11/94)	Cameca MBX Electron Microprobe Operating Procedure		--

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TWS-EES-DP-50, R1 (Deleted 4/9/92)	Operating Procedure for Gold Coating Samples Using the Technics Hummer II Sputtering System	--
TWS-EES-DP-51, R1 (Superseded by LANL-EES-DP-130, R0)	Mettler AE100 Operating Procedure (X-Ray Fluorescence Aanlysis Sample Weighing Procedure)	--
TWS-EES-DP-52, R3 (Superseded by LANL-EES-DP-130, R0)	Sample Preparation for X-Ray Fluorescence Analysis: Fusing and Lapping	--
TWS-EES-DP-53, R1 (Superseded by LANL-EES-DP-130, R0)	Pulverizing Using the Rocklabs 3E Shatterbox	--
TWS-EES-DP-54, R1 (Superseded by LANL-EES-DP-130, R0)	Crushing: Operation of 50 Ton Hydraulic Press	--
TWS-ESS-DP-55, R1 (Superseded by LANL-EES-DP-130, R0)	Rock-Splitting: Operation of 50 Ton Hydraulic Press	--
TWS-EES-DP-106, R1 (Deleted 4/5/91)	Philips X-Ray Diffraction Procedure	--
CR No. 144 TWS-ESS-DP-114, R1 (Deleted 10/16/96)	Sample Collection Procedure for Rock Varnish Studies	--

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TWS-ESS-DP-120, R0 (Superseded by LANL-EES-DP-130, R0)	Procedure for Preparation of Rock Varnish Mounts	--
TWS-ESS-DP-122, R0 (Deleted 4/9/92)	Preparation of Electron Microprobe-Standard Mounts	--
TWS-ESS-DP-123, R0 (Deleted 4/9/92)	Operating Instructions for the Gatan Model 600 Dif Duomill	--
LANL-EES-DP-125, R1 (Deleted 6/22/95)	Certification of Standards for Electron Microanalysis	--
TWS-EES-DP-127, R0 (Deleted 8/24/93)	Sample Colleciton of Muck from Excavations of the Exploratory Shaft Facility for Mineralogy-Petrology Studies	--
TWS-ESS-DP-128, R0 (Deleted 12/10/96)	Procedure for Counting Opaque Minerals in Polished Thin Sections of Rock	--

Geo Engineering DPs (EES-4)	Title	Effective Date	Training Level: Read (R) or Formal (F)
LANL-EES-4-DP-801, R2 (E)	Single-And Multiple-Well Tracer Transport Experiments in the Field	10/16/96	R
LANL-EES-4-DP-802, R2 (E)	Preparation of Standards for Tracer Concentration Measurements	01/21/97	R
LANL-EES-4-DP-803, R1 (E)	Use of a Flow Cytometer to Determine particle Concentrations in Solutions	03/21/97	F
LANL-EES-4-DP-804, R1 (E)	Use of an Ion-Selective Electrode to Determine Ion Concentrations in Solution	05/06/97	R

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LANL-EES-4-DP-805, R1 (E)	Use of a Spectrophotometer or Fluorometer to Determine Constituent Concentrations in Solution	01/21/97	R
LANL-EES-4-DP-806, R2 (E)	Chromatographic Determination of Constituent Concentrations in Solution	05/06/97	R
Earth and Environmental Sciences		Effective Date	Training Level: Read (R) or Formal (F)
LANL-EES-5-DP-701, R0 (Deleted 09/13/95)	Light Detection and Ranging (LIDAR) Operations		--
Nuclear Waste Management Research and Development DPs (EES-13)		Effective Date	Training Level: Read (R) or Formal (F)
LANL-EES-13-DP-609, R3 (E)	Balance and Weight Calibration by LANL Standards and Calibration Group	12/10/96	R
LANL-EES-13-DP-612, R 1(E)	Identification, Collection, and Handling of Non-Required Assigned Core in the ESF	08/29/96	R
LANL-EES-13-DP-613, R0 (E)	Borehole Wireline Measurements	01/09/97	R
LANL-EES-13-DP-614, R0 (E)	Data Collection System Configuration Acceptance Testing	06/16/97	R
LANL-EES-13-DP-615, R0 (E)	Data Collection System Field Instrument Wire Terminations	06/16/97	R
TWS-EES-13-DP-601, R0 (Deleted 2/28/92)	Balance Calibration by a Service Organization		--
LANL-EES-13-DP-605, R1 (Deleted 8/24/93)	Preparation of Powders from Rock, Cinder, and Ash Samples		--
TWS-EES-13-DP-606, R2	Volcanism Field Studies		--

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TWS-EES-13-DP-607, R0 (Deleted 10/16/96)	Procedure for Volcanism Sample Storage and Control			--
LANL-EES-13-DP-608, R1 (Deleted 10/16/96)	Procedure for Preparation of Splits and Powders from Soil Samples			--
LANL-EES-13-DP-610, R0 (Deleted 10/16/96)	Extraction and Analysis of Noble Gases from Solid Samples			--
LANL-EES-13-DP-611, R0 (Deleted 10/16/96)	Use of Garmin GPS 100 for Location of Volcanic Features			--
Life Sciences		Title	Effective Date	Training Level Read (R) or Formal (F)
CR No. 100				
TWS-LS2-DP-401, R0	Maintenance of Culture Collection		3/24/89	F
LANL-LS2-DP-405, R0	ESF Sample Collection for Microbial Analyses		11/11/94	F
TWS-LS2-DP-402, R0 (Deleted 3/25/92)	Sorption Studies—Uptake of ²³⁹ Pu 4+ by a <u>Pseudomonas sp.</u>			--
LANL-LS2-DP-403, R0 (Deleted 12/10/96)	Preparation and Purification of Siderophore			--
LANL-LS2-DP-404, R0 (Deleted 12/10/96)	Procedure for the Determination of Microbial Enhanced Colloidal Agglomeration			--

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TWS-HSE12-DP-301, R1 (Deleted 7/31/95)	Field Collection of Experimental Materials		--
TWS-HSE12-DP-302, R0 (Deleted 7/31/95)	Cation and Anion Exchange		--
TWS-HSE12-DP-303, R0 (Deleted 7/31/95)	Zero Point of Charge (Potentiometric Method)		--
TWS-HSE12-DP-304, R0 (Deleted 7/31/95)	Zero Point of Charge (Electrophoresis Method)		--
TWS-HSE12-DP-305, R0 (Deleted 7/31/95)	Equilibrium Batch Sorption		--
TWS-HSE12-DP-306, R0 (Deleted 7/31/95)	Kinetic Batch Sorption		--
TWS-HSE12-DP-307, R1 (Deleted 7/31/95)	Sample Identification and Control		--
TWS-HSE12-DP-310, R1 (Deleted 7/31/95)	Calibration and Use of the Phototachometer		--
TWS-HSE12-DP-311, R1 (Deleted 7/31/95)	Sample Preparation		--

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TWS-HSE12-DP-312, R1 (Deleted 7/31/95)	particle Size Reduction of Geologic Media	--
TWS-SHE12-DP-313, R1 (Deleted 7/31/95)	Calibration and Use of Centrifuges	--
TWS-HSE12-DP-314, R0 (Deleted 7/31/95)	Electrical conductivity Measurement	--
TWS-HSE12-DP-315, R0 (Deleted 7/31/95)	Calibration and Use of Temperature Measurement and Control Devices	--
TWS-HSE12-DP-316, R1 (Deleted 12/23/96)	Preparation of Standard and Reagent Solutions	--
LANL-EES15-DP-317, R2 (Deleted 12/23/96)	Calibration and Use of Analytical and Top-Loading Balances	--
TWS-HSE12-DP-318, R1 (Deleted 7/31/95)	pH Measurement, Acid-Base Solution Standardization, and Total Alkalinity Determination	--
TWS-HSE12-DP-320, R0 (Deleted 7/31/95)	Measurement of Dissolved Oxygen	--
TWS-HSE12-DP-322, R0 (Deleted 7/31/95)	Magnetic Separation of Solid Materials	--
TWS-HSE12-DP-323, R0 (Deleted 7/31/95)	Spectrophotometric Determination of Constituent Concentrations in Solution	--

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LANL-EES15-DP-326, R0 (Deleted 10/16/96)	Ion-Chromatographic Determination of Constituent Concentrations in Solution	--
LANL-EES15-DP-327, R0 (Deleted 10/16/96)	Use of a Flow Cytometer to Determine Particle concentrations in Solution	--
LANL-EES15-DP-328, R0 (Deleted 10/16/96)	Use of an Ion-Selective Electrode to Determine ion Concentrations in Solution	--

Lawrence Berkeley Laboratory	Title	Effective Date	Training Level: Read (R) or Formal (F)
TWS-LBL-DP-02, R0 (Deleted 12/10/96)	Calibration of Low-Energy Gamma Counters for the Yucca Mountain Waste Element Solubility Study		--
YMP-LBL-DP-03, R0 (Deleted 12/10/96)	X-ray Powder Diffraction Analysis for the Yucca Mountain Waste Element Solubility Study		--
YMP-LBL-DP-04, R0 (Deleted 12/10/96)	Trace Metal Characterization by Atomic Emission Spectroscopy for the Yucca Mountain Waste Element Solubility Study		--
YMP-LBL-DP-05, R1 (Deleted 12/10/96)	Sodium Concentration Determination Procedure for the Yucca Mountain Waste Element Solubility Study		--
TWS-LBL-DP-06, R0 (Deleted 12/10/96)	Eh (Redox Potential) Measurements for the Yucca Mountain Waste Element Solubility Study		--
YMP-LBL-DP-07, R0 (Deleted 12/10/96)	Samples Identification and Handling Procedure for the Yucca Mountain Waste Element Solubility Study		--

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TWS-LBL-DP-10, R0 (Deleted 12/10/96)	Determination of Plutonium Oxidation States of Soluble Species from Solubility Measurements at Concentrations Below 10^{-5} M for the Yucca Mountain Waste Element Solubility Study	--
TWS-LBL-DP-11, R0 (Deleted 12/10/96)	Detailed technical Procedure (DP) for Control of Total Carbonate Concentration ($^{\circ}$ T) in Groundwaters for the Yucca Mountain Waste Element Solubility Study	--
TWS-LBL-DP-13, R0 (Deleted 12/10/96)	Procedure for pH Measurement for the Yucca Mountain Waste Element Solubility Study	--
TWS-LBL-DP-15, R0 (Deleted 12/10/96)	Procedure for Operating the Wallac 1219 Liquid Scintillation Counter for the Yucca Mountain Waste Element Solubility Study	--

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